

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
 (Chapter II of the Patent Cooperation Treaty)  
 (PCT Article 36 and Rule 70)

Applicant's or agent's file reference 40464WOP00	<div style="display: flex; justify-content: space-between;"> <div><b>FOR FURTHER ACTION</b></div> <div>See Form PCT/IPEA/416</div> </div>	
International application No.  <b>PCT/AU2004/001251</b>	International filing date (day/month/year) 15 September 2004	Priority date (day/month/year)  19 September 2003
International Patent Classification (IPC) or national classification and IPC  <b>Int. Cl. <sup>7</sup> B01D 65/02</b>		
Applicant  <b>U.S. FILTER WASTEWATER GROUP, INC. et al</b>		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☐ (sent to the applicant and to the International Bureau) a total of sheets, as follows:
 

☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).  
☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I
  - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
 

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application

Date of submission of the demand 1 July 2005	Date of completion of the report 30 August 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  <b>DAVID K. BELL</b> Telephone No. (02) 6283 2309

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001251

## Box No. 1 Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1 (b))  
☐ publication of the international application (under Rule 12.4)  
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages **1 to 10** as originally filed/furnished  
 pages\* received by this Authority on with the letter of  
 pages\* received by this Authority on with the letter of

☒ the claims:

pages **11 to 15** as originally filed/furnished  
 pages\* as amended (together with any statement) under Article 19  
 pages\* received by this Authority on with the letter of  
 pages\* received by this Authority on with the letter of

☒ the drawings:

pages as originally filed/furnished  
 pages\* **1/2 and 2/2** received by this Authority on **3 November 2004** with the letter of  
**3 November 2004**  
 pages\* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages  
☐ the claims, Nos.  
☐ the drawings, sheets/figs  
☐ the sequence listing (specify):  
☐ any table(s) related to the sequence listing (specify):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages  
☐ the claims, Nos.  
☐ the drawings, sheets/figs  
☐ the sequence listing (specify):  
☐ any table(s) related to the sequence listing (specify):

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001251

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims 1 to 23	YES
	Claims	NO
Inventive step (IS)	Claims 1 to 23	YES
	Claims	NO
Industrial applicability (IA)	Claims 1 to 23	YES
	Claims	NO

## 2. Citations and explanations (Rule 70.7)

- D1 = WO 1986005116 A1 (Memtec Ltd) 12 September 1986  
 D2 = WO 1986005705 A1 (Memtec Ltd) 9 October 1986  
 D3 = WO 1985001449 A1 (Memtec Ltd) 11 April 1985  
 D4 = WO 1993002772 A1 (Memtec Ltd) 18 February 1993  
 D5 = JP 06-190250 A (Mitsubishi Rayon Co Ltd) 12 July 1994  
 D6 = WO 2001036075 A1 (Zenon Environmental Inc) 25 May 2001  
 D7 = WO 1998028066 A1 (Memtec America Corp) 2 July 1998  
 D8 = JP 06-238273 A (Mitsubishi Rayon Eng Co) 30 August 1994

The invention as defined in the present specification is a method of backwashing a filtration system in which the permeate remaining in the system when the filtration process is stopped is used to provide liquid for backwashing the membrane pores without the use of any additional liquid.

None of the cited documents either singly, nor in obvious combination, disclose or fairly suggest the invention as defined in the present claims. The claimed invention is therefore novel, has an inventive step and is industrially applicable.

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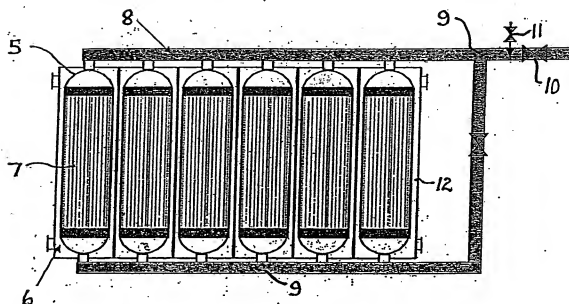


Fig. 1

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# Membrane Performance with Sweeping and Air

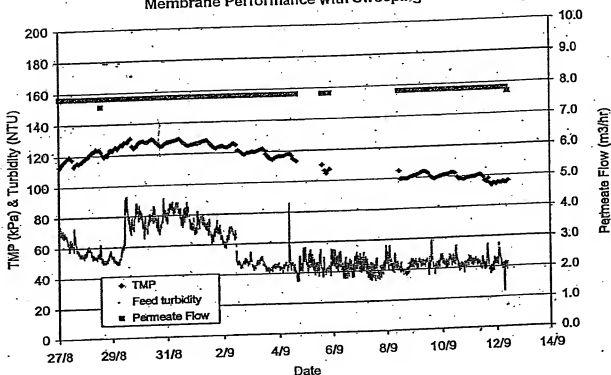


Figure 2 Membrane Filtration Performance with Air Pushed Backwash

## A Comparison of Sweep with and without Air

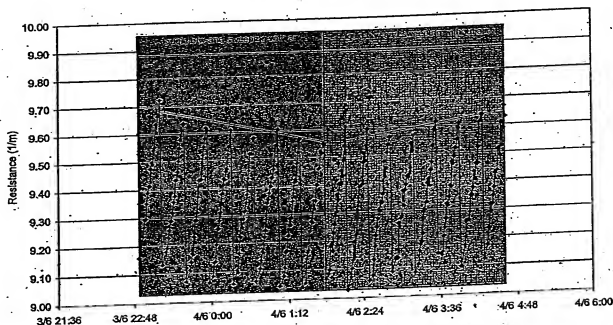


Figure 3 A Comparison of Sweep with and without Air